इंटरनेट मानक

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IS 9911 (1981): Cannula, Brain [MHD 7: Neurosurgery Instruments Implants and Accessories]

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(Reaffirmed 1997)

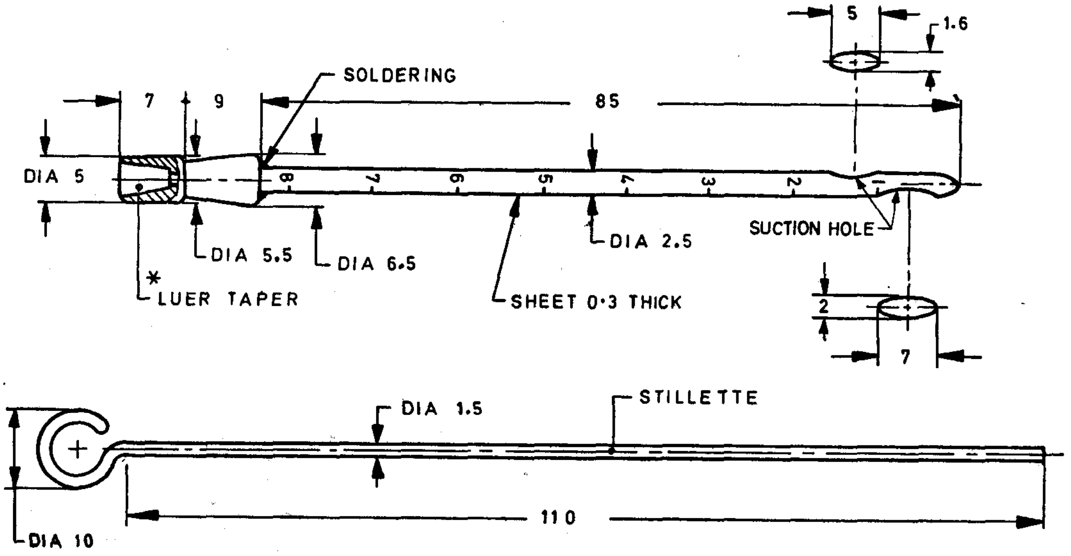
Indian Standard

SPECIFICATION FOR CANNULA, BRAIN

Neurosurgery Instruments Sectional Committee, CPDC 29 [Ref : Doc : CPDC 29 (1352)]

1. Scope — Covers materials, dimensions and other requirements for brain cannula, used in neurosurgery.

2. Shape and Dimensions — As shown in Fig. 1.



*See IS : 3234-1965 'Specification for conical fittings for hypodermic syringes, needles, and other medical equipments, Luer type.

All dimensions in millimetres.
FIG. 1 CANNULA, BRAIN

2.1 A deviation of ±2·5 percent shall be allowed on all dimensions.

3. Material

3.1 *Cannula* — Fine silver (*see* IS : 2112-1962 Grades of silver and silver alloys) or stainless steel conforming to designation 04Cr18Ni10 or 07Cr 18Ni9 of IS : 6911-1972. 'Specification for stainless steel plate, sheet and strip '.

3.2 *Hub* — Free cutting brass rod or bar conforming to IS : 319-1974 ' Specification for free-cutting brass bars, rods and sections (*third revision*) '.

3.3 *Stillette* — Hard drawn stainless steel wire conforming to IS : 6528-1972 ' Specification for stainless steel wire '.

4. Workmanship and Finish

4.1 All surfaces shall be free from pits, dents, burs, scales and other surface defects.

4.2 The hub of the cannula shall have a female luer taper which shall conform to IS : 3234-1965.

4.3 The cannula shall be pushed well into the cavity of the hub and securely swaged. The cannula and the hub shall be concentric and well aligned.

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4.4 Stillette supplied with the cannula shall be finished smooth and free from nicks and kinks. It shall slide smoothly into the cannula.

4.5 The tip of the cannula shall be of round shape with two suction holes suitably formed and situated as shown in Fig. 1.

4.6 The hub shall be free from sharp edges and other defects. It shall be plated both inside and outside, chromium over nickel conforming to Service Grade No. 2 of IS : 4827-1968 'Specification for electroplated coatings of nickel and chromium on copper and copper alloys'.

5. Tests

5.1 *Leakage Test* — Connect the cannula to the barrel of a syringe and the open end of the barrel to an air pump, delivering air at a pressure of 100 kN/m^2. Block the cannula outlet by suitable means and start the air pump. Check for any leakage at the joint between the cannula and syringe and other parts of the cannula by dipping into water and observing for leakage in the form of any bubbles. There shall be no leakage during the test.

5.2 *Security of Swaging* — The swaging of the cannula with the hub shall be tested by applying a pull of 90 N for one minute. The cannula shall not come out of the hub and it shall not become loose.

5.3 *Corrosion Resistance Test*

5.3.1 *For cannula made of silver* — The cannula shall be immersed in a 10 percent solution of citric acid at room temperature for 5 hours. It shall then be boiled in distilled water for 30 minutes, and cooled while immersed in the same for 48 hours. The cannula or hub shall show no corrosion. The test shall be conducted in a glass container.

5.3.2 *For cannula made of stainless steel* — Scrub the cannula with soap and warm water, rinse in hot water and then dip in 95 percent ethyl alcohol. Dry the cannula. Immerse in copper sulphate solution at room temperature for 6 minutes and wash off with fresh water or wet cotton wool. The solution shall be made as follows:

Copper sulphate ($CuSO_4 \, 5H_2O$)	4·0 g
Sulphuric acid [H_2SO_4 (sp gr 1·84)]	10·0 g
Water (*see* IS : 1070-1977 Specification for water for general laboratory use (*second revision*)	90·0 ml

No red stains or spots on cannula shall be allowed but dulling of the polished surface may be permitted.

6. Marking

6.1 The hub of the cannula shall be marked with the manufacturer's name, initials or recognized trade-mark. The cannula shall be graduated lengthwise from 1 to 8, each graduation being marked at a distance of 10 mm from the other as shown in Fig. 1.

6.1.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

7. Packing — Each cannula with stillette shall be packed in accordance with the best trade practices. Alternatively, packing may be done as agreed to between the purchaser and the supplier.

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